IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: Michael S. Bender, et al.	§	Group Art Unit: 2187
	§	
	§	Examiner: Farrokh, Hashem
Serial No. 10/780,270	§	
	§	Atty. Dkt. No.: 5681-76100
Filed: February 17, 2004	§	
	§	
For: System and Method for Accessing Storage Devices Attached to a Stateless Client	§	

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

Further to the Notice of Appeal filed August 3, 2007, Appellants present this Appeal Brief. Appellants respectfully request that the Board of Patent Appeals and Interferences consider this appeal.

I. REAL PARTY IN INTEREST

As evidenced by the assignment recorded at Reel/Frame 015007/0086, the subject application is owned by Sun Microsystems, Inc., a corporation organized and existing under and by virtue of the laws of the State of Delaware, and having its principal place of business at 4150 Network Circle, Santa Clara, CA, 95054.

II. RELATED APPEALS AND INTERFERENCES

No other appeals, interferences or judicial proceedings are known which would be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-21 are pending in the application and stand finally rejected. The rejection of claims 1-21 is being appealed. A copy of claims 1-21 is included in the Claims Appendix hereinbelow.

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to a system that includes a server configured to execute an application. (*See, e.g.*, FIG. 1, servers 20a-b; FIGs. 4, 6, server 20, application(s) 400; FIG. 5, block 502; and p. 6, lines 5-14; p. 7, lines 5-15; p. 14, lines 6-14; p. 15, lines 2-11; p. 18, lines 5-13; p. 19, lines 15-28.)

The system of claim 1 also includes a stateless client configured to communicate with the server, and further configured such that during use, a user interacts with the application via said stateless client. (*See, e.g.*, FIG. 1, stateless clients 10a-b; FIG. 2, stateless client 10; FIG. 5, block 504; and p. 6, line 16 – p. 7, line 3; p. 18, lines 15-20.)

The system of claim 1 further includes a mass storage device locally coupled to the stateless client, wherein the mass storage device is accessible by the user via the server. (*See, e.g.*, FIG. 1, storage devices 20a-b; FIG. 2, storage device(s) 20; FIG. 5, block 516; p. 8, lines 14-30; p. 9, lines 11-19; p. 19, lines 5-11.)

Further, the server recited in claim 1 is further configured to store data to the mass storage device via the stateless client in response to said user's interaction with the application. (*See, e.g.*, FIGs. 4, 6, application(s) 400, kernel module(s) 410, storage service daemon 430; FIG. 5, block 516; p. 15, line 2 – p. 16, line 15; p. 19, lines 6-11.)

Independent claim 8 is directed to a method that includes executing an application on a server. (*See, e.g.*, FIG. 1, servers 20a-b; FIGs. 4, 6, server 20, application(s) 400; FIG. 5, block 502; and p. 6, lines 5-14; p. 7, lines 5-15; p. 14, lines 6-14; p. 15, lines 2-11; p. 18, lines 5-13; p. 19, lines 15-28.)

The method also includes a user interacting with the application via a stateless client configured to communicate with the server (*see, e.g.*, FIG. 1, stateless clients 10a-b; FIG. 2, stateless client 10; FIG. 5, block 504; and p. 6, line 16 – p. 7, line 3; p. 18, lines 15-20) and the user accessing a mass storage device via the server, wherein the storage

device is locally coupled to the stateless client (*see, e.g.*, FIG. 1, storage devices 20a-b; FIG. 2, storage device(s) 20; FIG. 5, block 516; p. 8, lines 14-30; p. 9, lines 11-19; p. 19, lines 5-11).

The method further includes the server storing data to the mass storage device via the stateless client in response to the user interacting with the application. (*See, e.g.*, FIGs. 4, 6, application(s) 400, kernel module(s) 410, storage service daemon 430; FIG. 5, block 516; p. 15, line 2 – p. 16, line 15; p. 19, lines 6-11.)

Independent claim 15 is directed to a computer-accessible storage medium comprising program instructions, wherein the program instructions are computer-executable by a server to perform various tasks. (*See, e.g.*, FIG. 8, server system 800, processor 810, system memory 830, code 835; and p. 26, line 19 – p. 28, line 19.)

In particular, the program instructions recited in claim 15 are computer-executable to detect the presence of a mass storage device locally coupled to a stateless client (*see, e.g.*, FIG. 1, storage devices 20a-b; FIG. 2, storage device(s) 20; FIG. 4, device manager 440; FIG. 5, block 516; p. 8, lines 14-30; p. 9, lines 11-19; p. . 17, lines 3-14; p. 19, lines 5-11) and to interface the mass storage device to an application executable on the server (*see, e.g.*, FIG. 4, kernel modules 410, storage service daemon 430; and p. 14, lines 11-14).

The user interacts with the application via the stateless client, and the mass storage device is accessible by the user via the server. (*See, e.g.*, FIG. 1, stateless clients 10a-b; FIG. 2, stateless client 10; FIG. 5, block 504; and p. 6, line 16 – p. 7, line 3; p. 18, lines 15-20.)

Further, the program instructions are executable by the server to store data to the mass storage device via the stateless client in response to the user's interaction with the application. (*See, e.g.*, FIGs. 4, 6, application(s) 400, kernel module(s) 410, storage service daemon 430; FIG. 5, block 516; p. 15, line 2 – p. 16, line 15; p. 19, lines 6-11.)

The summary above describes various examples and embodiments of the claimed subject matter. However, the claims are not necessarily limited to any of these examples and embodiments. The claims should be interpreted based on their respective wording.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-5, 8-12, and 15-19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Billington et al. (U.S. Patent No. 7,103,760).

2. Claims 6, 13 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Billington et al. (U.S. Patent No. 7,103,760) in view of Pooni et al. (U.S. Publication No. 2004/0064461).

3. Claims 7, 14 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Billington et al. (U.S. Patent No. 7,103,760) in view of Hochmuth et al. (U.S. Publication No. 2003/0056063).

VII. ARGUMENT

First ground of rejection:

The Examiner rejected claims 1-5, 8-12, and 15-19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Billington et al. (U.S. Patent No. 7,103,760) (hereinafter, "Billington") Appellants respectfully traverse this rejection for at least the following reasons. Different groups of claims are addressed under their respective subheadings.

Claims 1-4, 8-11, and 15-18:

Regarding claim 1, contrary to the Examiner's assertion, the cited reference clearly fails to anticipate a system comprising a server configured to execute an application; a stateless client configured to communicate with the server and further configured such that during use, a user interacts with the application via the stateless client; and a mass storage device locally coupled to the stateless client, wherein the mass storage device is accessible by the user *via the server*; where the server is further configured to store data to the mass storage device via the stateless client *in response to the user's interaction with the application*.

1. Billington fails to disclose that a mass storage device locally coupled to a thin client is accessible via a server.

In rejecting claim 1, the Examiner asserts that Billington discloses a thin client 12 having a locally connected mass storage device 80, citing Billington, Figure 11 and col. 13, line 19 to col. 14, line 16. In particular, the Examiner asserts that "[t]he mass storage device [of Billington] is accessible by users via processor 14 that comprises a server." Final Action, p. 3. Appellants traverse the Examiner's assertion and submit that it finds no support in Billington's disclosure. Billington discloses that thin client 12 may be connected to processor 14 "acting as a server" (col. 13, lines 35-37) and may be additionally coupled to storage device 80 (col. 13, lines 22-24). Billington further

discloses that use of thin client 12 may enable multiple users to share the resources of a single PC (col. 13, lines 62-63).

However, nowhere does Billington describe at any level of detail the manner in which mass storage device 80 coupled to thin client 12 is accessed relative to processor 14. Specifically, Billington fails to disclose that the mass storage device is accessible by a user via the server, as required by claim 1. Further, as demonstrated in greater detail below, this manner of storage device accessibility is not inherent in Billington's disclosure.

2. Billington fails to disclose a server configured to store data to a mass storage device via a thin client in response to a user's interaction with an application executable on the server.

The Examiner acknowledges that "Billington does not explicitly spell out how to store the data to mass storage [device] 80." Final Action, p. 3. Appellants agree with the Examiner's assessment in this regard. As noted by the Examiner, at col. 5, lines 50-57, Billington describes a thin client network that "facilitates concurrent use of the resources of one powerful PC by multiple users at thin clients." Billington further describes, as noted above, that mass storage devices may be locally connected to a thin client.

However, none of these features, nor any other feature of Billington, amounts to a disclosure that a server is configured to store data to a mass storage device that is locally coupled to a stateless client ***in response to a user's interaction*, via the stateless client, with an application *that the server is configured to execute***, as required by claim 1. Appellants note that if Billington fails to "explicitly spell out" how data is stored to a mass storage device as acknowledged by the Examiner, Billington cannot possibly disclose the detailed recitation of claim 1 in which such storage occurs in response to a specific and detailed event involving the explicitly recited interoperation of several system components, i.e., the application, the server, and the thin client. Nor could this limitation be inferred from the disclosure of Billington. For example, Billington's thin

client may allow access to mass storage device 80 without the involvement of processor 14. There is no teaching, explicit or implicit, from which one or ordinary skill in the art would infer that Billington's mass storage device 80 is accessible by a user via a server, as required by Appellant's claim 1. For example, Billington's thin client 12 could allow access to mass storage device 80 without the involvement of processor 14.

In the Advisory Action, the Examiner additionally quotes from Billington, col. 11, lines 28-39, which states that "digital video data can be transferred to the processor, to the connected mass storage device, to the printer to print out a still image, etc." However, this passage of Billington refers to a completely different embodiment than the thin client embodiment discussed above. In this passage, Billington is discussing an embodiment in which "the peripheral device 12 can comprise a printer having further devices 39a, 39b incorporated in the case 32." Billington, Figure 4 and col. 11, lines 18-19, emphasis added. By contrast, the embodiment discussed at col. 13-14 refers to "an implementation of a hard-wired or wireless network where the peripheral 12 can comprise a thin client device." Billington, col. 13, lines 20-22, emphasis added. A printer is not a thin stateless client device, as Billington's distinct treatment of these embodiments demonstrates. Thus, the interaction that a printer may have with a mass storage device is irrelevant to the interaction a stateless client may have with a server, an application, a user, and a mass storage device as recited in claim 1.

3. The omitted claim features are not inherently disclosed by Billington and cannot be inferred from Billington.

The Advisory Action states that "the Examiner believes that Billington directly or inherently anticipates all the limitations recited in [] claim 1." Advisory Action, p. 4. In the Advisory Action, the Examiner asserts that "[t]he resources [of Billington] include mass storage devices and use of mass storage device is inherently for storing data to and reading data from it." Advisory Action, p. 3. Also, in the Final Action, the Examiner asserts that "it is clear that the users of the thin clients use the resources provided by processor 14 comprising a server and the mass storage 80. The processor 14 uses

peripheral devices including the mass storage 80 for storing data." Final Action, pp. 3-4. Appellants traverse the Examiner's assertions.

According to MPEP 2112.IV, "[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic," citing *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993). Further, "[t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient,'" citing *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (internal citations omitted, emphasis added). Further, "[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art," citing *Ex parte Levy,* 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

The evidence of record does not establish that the features recited in claim 1, in which a mass storage device locally coupled to a thin client is accessible by a user via a server and in which the server is further configured to store data to the mass storage device via the stateless client in response to the user's interaction with an application the server is configured to execute, follow necessarily from the disclosure of Billington according to the standard given above. The Examiner's assertions are merely speculative assumptions regarding how Billington's system might operate that are unsupported by any positive disclosure within the Billington reference itself. That is, simply because the system of Billington might be capable of adaptation to include the features of claim 1 does not entail that the recitations of claim 1 necessarily, inherently follow from the system of Billington.

If a given feature is inherent—that is, necessarily present—in the prior art, then any other feature that cannot occur together with the given feature must necessarily be

absent from the prior art. Correspondingly, if another feature that cannot occur together with the given feature is in fact compatible with the prior art, then the given feature cannot be inherent. As previously noted by Appellants, given Billington's silence as to the specific manner in which data is written to mass storage device 80, a thin client 12 that interacts directly with mass storage device 80 without any intervention of processor 14 would be perfectly consistent with Billington's teachings. For example, in the absence of any implementation detail, it is conceivable that Billington's thin client may possess sufficient functionality (such as local device drivers) to interact with mass storage device 80 without the involvement of processor 14.

However, a thin client that writes data directly to a mass storage device without the involvement of a server (and by extension, without the data storage occurring in response to a user's interaction with an application the server is configured to execute) contradicts the recitations of claim 1, which requires that the mass storage device coupled to the thin client be accessible by a user via the server and that the server be configured to store data to the mass storage device in response to the user's interaction with the recited application. Because features that cannot occur together with the features of claim 1 are compatible with Billington's disclosure, it follows that the features of claim 1 are not inherently disclosed by Billington and cannot be inferred from Billington.

4. The standard of anticipation has not been met with respect to the independent claims.

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The **identical invention** must be shown **in as complete detail** as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

As demonstrated above, Billington fails to explicitly disclose various features of claim 1. Appellants have further demonstrated that the features of claim 1 that are omitted from Billington do not follow inherently from Billington. Similar arguments apply to independent claims 8 and 15, which recite features similar to claim 1. Thus, Billington fails to meet the above standard with respect to independent claims 1, 8, and 15, and therefore cannot be said to anticipate the independent claims. Appellants further note that the remaining cited references do not remedy the omissions of Billington with respect to the independent claims.

Claims 5, 12, and 19:

Regarding claim 5, in addition to the reasons given above, the cited references further fail to disclose that the mass storage device is a solid-state mass storage device.

In rejecting claim 5, the Examiner asserts that Billington, col. 12 line 14 discloses the recited features. Final Action, p. 4. However, the cited portion of Billington has nothing to do with the embodiment of Billington in which a thin client device is discussed. The extent to which Billington describes any aspect of a thin client device can be found at col. 13, line 19 – col. 15, line 35. Nowhere in this section does Billington describe that a solid-state mass storage device may be locally coupled to a thin client. Therefore, Appellants submit that the rejection of claim 5 and similar claims 12 and 19 is unsupported by Billington.

Second ground of rejection:

The Examiner rejected claims 6, 13 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Billington in view of Pooni et al. (U.S. Publication No. 2004/0064461) (hereinafter, "Pooni"). Appellants traverse this rejection for at least the following reasons.

Regarding claim 6, Appellants note that Pooni fails to remedy the deficiencies of Billington noted above with respect to the independent claims. Further, Appellants submit that **the Examiner has not established an adequate reason to combine the references in the manner suggested**.

In rejecting claim 6, the Examiner asserts that Pooni discloses a kernel execution mode and a user execution mode as well as a storage service daemon executable in user mode, asserting that Pooni's user mode daemon corresponds to the recited storage service daemon. Final Action, p. 7. The Examiner further asserts that "[t]he motivation for executing [a] storage service daemon in user mode as taught by paragraph 33, page 3 of Pooni is a method and arrangement for dynamically detecting one or more SCSI devices on a Linux host, thus improving the method [that] existed in [the] prior art." *Id.* Appellants traverse the Examiner's assertion. While Pooni mentions a "user mode daemon," Pooni does not describe any aspect of how this daemon contributes to achieve the dynamic detection of one of more SCSI devices. Instead, Pooni appears to treat the user mode daemon as an artifact of implementation. If the disclosed user mode daemon plays no essential role in achieving the desired result suggested by Pooni, that result cannot serve as a reason to combine Pooni with Billington. That is, one of ordinary skill in the art in possession of a reference would not find reason in the goal or object of that reference to combine with other art a feature of that reference that was immaterial to the disclosed goal or object of the reference, since the immaterial feature would not contribute the advantage sought. Thus, because Pooni's user mode daemon does not contribute to the achievement of the Examiner's asserted motivation of dynamic detection of SCSI devices, one would not have a reason to combine Pooni's user mode daemon with Billington.

For at least these reasons, Appellants submit that the rejection of claim 6 and similar claims 13 and 20 is unsupported.

Third ground of rejection:

The Examiner rejected claims 7, 14 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Billington in view of Hochmuth et al. (U.S. Publication No. 2003/0056063) (hereinafter, "Hochmuth"). Appellants traverse this rejection for at least the following reasons.

Regarding claim 7, Appellants note that Hochmuth fails to remedy the deficiencies of Billington noted above with respect to the independent claims. Further, **Appellants submit that the combination of Hochmuth and Billington fails to teach or suggest that the recited mass storage device comprises one or more unit interfaces, wherein each unit interface comprises one or more logical units (LUNs), and wherein each logical unit comprises one or more partitions.**

In rejecting claim 7, the Examiner acknowledges that Billington fails to disclose that the recited mass storage device comprises one or more unit interfaces and that each unit interface comprises one or more LUNs, and asserts that Hochmuth, paragraph 30 discloses these features. Final Action, p. 8. However, the cited portion of Hochmuth does not describe any aspect of a unit interface of a mass storage device. Rather, this portion of Hochmuth is describing a user interface that is implemented by Hochmuth's configuration server 54. A user interface provided by a server simply has nothing to do with a *unit* interface of a mass storage device. Moreover, it is unclear how Hochmuth's user interface, which Hochmuth describes in paragraph 30 as preferably being implemented in program code (i.e., software), could possibly include one or more *LUNs*, as is required for the unit interface required by claim 7.

For at least these reasons, Appellants submit that the rejection of claim 7 and similar claims 14 and 21 is unsupported.

CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 1-21 was erroneous, and reversal of this decision is respectfully requested.

The Commissioner is authorized to charge the appeal brief fee of $500.00 and any other fees that may be due to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5861-76100/RCK.

Respectfully submitted,

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Date: October 3, 2007

VIII. CLAIMS APPENDIX

The claims on appeal are as follows.

1. A system, comprising:

a server configured to execute an application;

a stateless client configured to communicate with said server, and further configured such that during use, a user interacts with said application via said stateless client; and

a mass storage device locally coupled to said stateless client, wherein said mass storage device is accessible by said user via said server;

wherein said server is further configured to store data to said mass storage device via said stateless client in response to said user's interaction with said application.

2. The system as recited in claim 1, wherein said mass storage device is locally coupled to said stateless client via a Universal Serial Bus (USB) or IEEE 1394 interface.

3. The system as recited in claim 1, wherein said mass storage device employs magnetic media.

4. The system as recited in claim 1, wherein said mass storage device employs optical media.

5. The system as recited in claim 1, wherein said mass storage device is a solid-state mass storage device.

6. The system as recited in claim 1, wherein said server is further configured to provide a kernel execution mode and a user execution mode, and wherein said server is further configured to execute a storage service daemon, wherein said storage service daemon executes in user execution mode.

7. The system as recited in claim 1, wherein said mass storage device comprises one or more unit interfaces, wherein each unit interface comprises one or more logical units (LUNs), and wherein each logical unit comprises one or more partitions.

8. A method, comprising:

executing an application on a server;

a user interacting with said application via a stateless client configured to communicate with said server;

said user accessing a mass storage device via said server, wherein said storage device is locally coupled to said stateless client; and

said server storing data to said mass storage device via said stateless client in response to said user interacting with said application.

9. The method as recited in claim 8, wherein said mass storage device is locally coupled to said stateless client via a Universal Serial Bus (USB) or IEEE 1394 interface.

10. The method as recited in claim 8, wherein said mass storage device employs magnetic media.

11. The method as recited in claim 8, wherein said mass storage employs optical media.

12. The method as recited in claim 8, wherein said mass storage device is a solid-state mass storage device.

13. The method as recited in claim 8, wherein said server is further configured to provide a kernel execution mode and a user execution mode, and wherein said server is further configured to execute a storage service daemon, wherein said storage service daemon executes in user execution mode.

14. The method as recited in claim 8, wherein said mass storage device comprises one or more unit interfaces, wherein each unit interface comprises one or more logical units (LUNs), and wherein each logical unit comprises one or more partitions.

15. A computer-accessible storage medium comprising program instructions, wherein the program instructions are computer-executable by a server to:

detect the presence of a mass storage device locally coupled to a stateless client; and

interface said mass storage device to an application executable on said server;

wherein a user interacts with said application via said stateless client, wherein said mass storage device is accessible by said user via said server; and

wherein the program instructions are further executable by the server to store data to said mass storage device via said stateless client in response to said user's interaction with said application.

16. The computer-accessible storage medium as recited in claim 15, wherein said mass storage device is locally coupled to said stateless client via a Universal Serial Bus (USB) or IEEE 1394 interface.

17. The computer-accessible storage medium as recited in claim 15, wherein said mass storage device employs magnetic media.

18. The computer-accessible storage medium as recited in claim 15, wherein said mass storage device employs optical media.

19. The computer-accessible storage medium as recited in claim 15, wherein said mass storage device is a solid-state mass storage device.

20. The computer-accessible storage medium as recited in claim 15, wherein said server is configured to provide a kernel execution mode and a user execution mode, and wherein said program instructions are further executable to implement a storage service daemon, wherein said storage service daemon executes in user execution mode.

21. The computer-accessible storage medium as recited in claim 15, wherein said mass storage device comprises one or more unit interfaces, wherein each unit interface comprises one or more logical units (LUNs), and wherein each logical unit comprises one or more partitions.

IX. EVIDENCE APPENDIX

No evidence submitted under 37 CFR §§ 1.130, 1.131 or 1.132 or otherwise entered by the Examiner is relied upon in this appeal.

X. RELATED PROCEEDINGS APPENDIX

There are no related proceedings.